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SURFACE TREATED PIGMENTS

What are surface treated products?

Surface treatment is a type of finishing in which certain auxiliaries, such as silane / silicones, are applied to pigments to influence their surface structure, physical and coloristic properties. Surface treatments were originally used for industrial purposes and coatings (lacquers, plastics, paints, paper etc.) to improve wetting, surface smoothness, bonding to the substrate and to reduce reactivity.

Surface treatments are used in the cosmetic industry to improve adhesion and wear, this treatment helps to enhance physical and chemical stability, reduce dusting of powders, optimize pigment dispersions, and to create innovations that are simply not possible with conventional pigments and powders.

Surface treatment is a particularly useful method for improving pigment dispersibility in various cosmetic formulations.



Why it is important?

These treatments allow a broad modification of the surface characteristics of the pigment particles which leads to novel improved products. This value added process improves surface chemistry of pigment powder which provides robust, permanently modified behavior, expanding formulation latitude in personal care and colour cosmetic products.

It is used to improve performance of various type of cosmetics formulations.

It improves skin feeling.

It compresses more easily in powder foundation which reduces the amount of binding agent.

Due to de-agglomeration, they can be modified to optimum wetting in various vehicles.



What we offer ?

Neelikon offers seven novel surface treatments treated with conventional silane and siloxane. These can be applied to a variety of inorganic and organic structures including siliceous and non-siliceous powders and pigments.

- ▶ ST 101 – N-Octadecyl – Triethoxysilane (OTS)
- ▶ ST 102 – Perfluoroalkyl Ethyl – Triethoxysilane (FHS)
- ▶ ST 103 – Poly- Diethylsiloxane (SSI)
- ▶ ST 104 – Methoxy PEG-10
Propyltrimethoxysilane
- ▶ ST 105 – Triethoxycaprylsilane (AS)
- ▶ ST 106 – Dimethicone (DS)
- ▶ ST 107 – Isopropyl Titanium Triisostearate (ITT)



Benefits of our Neelikon make Silicon Treated Products?

- ▶ High quality performance, easy to apply
- ▶ Low Prices
- ▶ Available in small packing
- ▶ Minimum Lead time.
- ▶ Silicon Treated Products provides smooth texture, evenly distribute colour, easy to blend.



① ST 101 – OTS Treatment

INCI Name : N-Octadecyl – Triethoxysilane

CAS No : 7399-00-0

EINES No : 230-995-9

ST 101 – is an excellent Hydrophobic Surface Treatment for organic and Inorganic Pigments which imparts excellent wetting properties to pigments. ST 101 also provides more emollient skin feel in powders and dispersed systems.

Key Features of ST 101

- Hydrophobic
- Excellent dispersibility with Oil / Silicon
- Low viscosity dispersion



Untreated D&C Red 27 Lake /
Lavanya Lilac in Water

OTS treated D&C Red 27 Lake /
Lavanya Lilac in Water



Recommended Application

- Powder Foundation
- Lipstick / Liquid Lipstick
- Eyeshadow
- Blusher
- Liquid Cream Foundation

Products Available :

Lavanya Laal (Red Iron Oxide)
Lavanya Sooraj (Yellow Iron Oxide)
Lavanya Kuku (Black Iron Oxide)
Lavanya Chaandani (Titanium Dioxide)
Lavanya Huryali (Chromium Oxide Green)
Lavanya Aasmani (Ultramarine Blue)

Lavanya Talc
Lavanya Mica
Lavanya Lilac / D&C Red 27 Al Lake
Lavanya Elegans / D&C Red 7 Ca Lake
Lavanya Blue 1 Lake
Lavanya Yellow 5 Lake

② ST 102 – FHS Treatment

INCI Name : Perfluoroalkyl Ethyl – Triethoxysilane
CAS No : 51851-37-7, 101947-16-4
EINES : 435-230-4

ST 102 is the series of unique surface treatment that makes pigments to be highly lipophobic and hydrophobic. This treatment allows pigments to repel water and also acts as sebumproof on the skin. It helps to repel skin oil and water for cosmetics at same time that can resist damage due to skin oil and moisture.

Key Features of ST 102

- Strong hydrophobicity and lipophobicity
- Suitable for long lasting product
- Smooth Texture / Spreadability
- Suitable for Wet / Dry formulas
- Waterproof / Sebumproof



FHS treated Lavanya Blue 1 Lake
in Water

FHS treated Lavanya Blue 1 Lake
in Oil



Water and Oil drops on the
surface of FHS treated Black Iron Oxide

Recommended Application

- Water / transfer resistant makeup
- Powder Foundation
- Liquid Foundation
- Eye Shadow
- Smudge proof make up

Products Available :

Lavanya Laal (Red Iron Oxide)
Lavanya Sooraj (Yellow Iron Oxide)
Lavanya Kuku (Black Iron Oxide)
Lavanya Chaandani (Titanium Dioxide)
Lavanya Huryali (Chromium Oxide Green)
Lavanya Aasmani (Ultramarine Blue)
Lavanya Gagan (Iron Blue)

Lavanya Talc
Lavanya Mica
Lavanya Lilac / D&C Red 27 Al Lake
Lavanya Elegans / D&C Red 7 Ca Lake
Lavanya Blue 1 Lake
Lavanya Yellow 5 Lake

③ ST 103 – SSI Treatment

INCI Name : Poly (Diethylsiloxane)

CAS No : 63148-61-8

EINES No : NA

ST 103 treated pigments offers faster dispersion, improved spread, and improved color development. It increases oil absorption allowing for ease of dispersion. It imparts the excellent wetting properties of the shorter chain silanes with more emollient skin feel in powders and dispersed systems.

Key Features of ST 103

- Improves dispersion
- Rich, lubricious feel
- Improves Solubility of Sunscreen Ingredients
- Uniform Dispersion
- Light / Dry skin feel



Products Available :

Lavanya Laal (Red Iron Oxide)
Lavanya Sooraj (Yellow Iron Oxide)
Lavanya Kuku (Black Iron Oxide)
Lavanya Chaandani (Titanium Dioxide)



Untreated
Lavanya Laal / Red Iron Oxide

SSI Treated
Lavanya Laal / Red Iron Oxide

Recommended Application

- Powder Foundation
- Lipstick / Liquid Lipstick
- BB Creams
- Liquid Foundations
- Lip Balm

Lavanya Lilac / D&C Red 27 Al Lake
Lavanya Elegans / D&C Red 7 Ca Lake
Lavanya Flamingo / D&C Red 6 Ba Lake

4 ST 104 – PGS Treatment

INCI Name : Methoxy PEG-10 Propyltrimethoxysilane
CAS No : 65994-07-2
EINES No : NA

ST 104 series is best alternative for that formulations where the difficulties occurs with untreated inorganic pigments for getting dispersion in water based cosmetic & Personal care formulations. ST 104 – surface modification creates an anionic, hydrophilic reacted coating that provides instant dispersion in aqueous media without high shear agitation.

Key Features of ST 104

- Hydrophilic
- Excellent dispersibility in water without high shear
- High Pigment loading, less sedimentation
- Reduce pigment flotation
- Improved wetting and dispersion capability



Untreated Red Iron Oxide /
Lavanya Laal in water

PGS treated Red Iron Oxide/
Lavanya Laal in water



Recommended Application

- Cosmetic Emulsion
- Liquid Eyeliner
- Water Based Concealers
- Mascara
- Oil in Water Foundation

Products Available :

Lavanya Laal (Red Iron Oxide)
Lavanya Kuku (Black Iron Oxide)

Lavanya Sooraj (Yellow Iron Oxide)
Lavanya Chaandani (Titanium Dioxide)

5 ST 105 – Alkyl Silane Treatment

INCI Name : Triethoxycaprylsilane

CAS No : 2943-75-1

EINES No : 220-941-2

ST 105 – treated pigments are coated with an alkyl functional silsesquioxane which provides a hydrophobic coating that increases the ease of particle dispersion in natural and synthetic fluids and helps to stabilize particles in emulsion systems. This superior treatment imparts excellent hydrophobicity with bright shade and superior texture to product formulation.

Key Features of ST 105

- Strong Hydrophobicity / Water repellency
- Excellent dispersibility in various oil
- Provides creamy texture, wet feeling
- Low viscosity dispersion
- Improved wetting and dispersion capability



Yellow
Iron Oxide

Red
Iron Oxide

Black
Iron Oxide

Titanium
Dioxide

AS treated products in Water



Recommended Application

- Pressed Powder
- Lipstick / Liquid Lipstick
- Eyeshadow
- Liquid Cream Foundation
- Blusher
- W/O and O/W emulsions.

Products Available :

Lavanya Laal (Red Iron Oxide)

Lavanya Kuku (Black Iron Oxide)

Lavanya Sooraj (Yellow Iron Oxide)

Lavanya Chaandani (Titanium Dioxide)

Lavanya Talc

Lavanya Rosy (Ultramarine Pink)

Lavanya White

Lavanya Lilac / D & C Red 27 Lake

Lavanya Elegans / D & C Red 7 Ca Lake

Lavanya Flamingo / D & C Red 6 Ba Lake

Lavanya Red 40 Lake

Lavanya Blue 1 Lake

Lavanya Yellow 5 Lake

Lavanya Mimosa / D&C Yellow 10 Al Lake

⑥ ST 106 – DS Treatment

INCI Name : Dimethicone

CAS No : 63148-62-9

EINES No : NA

ST 106 treated pigments is the series of high performance pigment which offers excellent light and smooth feel to skin. ST 106 provide good hydrophobicity to products and suitable for unhydrous product formulations.

Key Features of ST 106

- Good Hydrophobicity
- Less sticky feeling (silicone oil)
- Moist feeling
- No hydrogen generation
- Improve wear, lubricity and powder flow



DS treated Red Iron Oxide /
Lavanya Laal in Oil

DS treated Red Iron Oxide /
Lavanya Laal in Water



Recommended Application

- Powder Foundation
- Sunscreen
- Mascara
- Liquid Foundations
- Blusher

Products Available :

Lavanya Laal (Red Iron Oxide)

Lavanya Sooraj (Yellow Iron Oxide)

Lavanya Kuku (Black Iron Oxide)

Lavanya Chaandani (Titanium Dioxide)

7 ST 107 – ITT Treatment

INCI Name : Isopropyl Titanium Triisostearate

CAS No : 61417-49-0

EINES No : NA

ST 107 treated pigments are highly lipophilic product series which provides ease of particle size distribution in natural and syntetic fluid without high shear agitation. This offers high pigment loading in different silicon oil and vegetable oils. It gives better dispersion quality and lower viscosity.

Key Features of ST 107

- Excellent Hydrophobicity
- Highly Lipophilic
- Allow high pigment loading in liquid
- Good Affinity to skin.
- Consistent colour dispersion



Dispersion of ITT treated Yellow Iron Oxide / Lavanya Sooraj in Oil

ITT treated Yellow Iron Oxide / Lavanya Sooraj in Water



Recommended Application

- Water/silicon Emulsion
- Powders and Anhydrous Gels.
E.g. Foundation, Compact powder
- Lip care products

Products Available :

Lavanya Laal (Red Iron Oxide)
Lavanya Kuku (Black Iron Oxide)

Lavanya Sooraj (Yellow Iron Oxide)
Lavanya Chaandani (Titanium Dioxide)

Products Available :

Product Name	CI NO	ST 101	ST 102	ST 103	ST 104	ST 105	ST 106	ST 107
Lavanya Laal (Red Iron Oxide)	77491	✓	✓	✓	✓	✓	✓	✓
Lavanya Sooraj (Yellow Iron Oxide)	77492	✓	✓	✓	✓	✓	✓	✓
Lavanya Kuku (Black Iron Oxide)	77499	✓	✓	✓	✓	✓	✓	✓
Lavanya Chaandani (Titanium Dioxide)	77891	✓	✓	✓	✓	✓	✓	✓
Lavanya White	77891	-	-	-	-	✓	-	-
Lavanya Mica	77019	✓	✓	-	-	-	-	-
Lavanya Talc	-	✓	✓	-	-	✓	-	-
Lavanya Red 40 Lake	16035:1	-	-	-	-	✓	-	-
Lavanya Yellow 5 Lake	19140:1	✓	✓	-	-	✓	-	-
Lavanya Blue 1 Lake	42090:2	✓	✓	-	-	✓	-	-
Lavanya Flamingo / D&C Red 6 Ba Lake	15850:2	-	-	✓	-	✓	-	-
Lavanya Elegans / D&C Red 7 Ca Lake	15850:1	✓	✓	✓	-	✓	-	-
Lavanya Lilac / D&C Red 27 Al Lake	45410:2	✓	✓	✓	-	✓	-	-
Lavanya Mimosa / D&C Yellow 10 Al Lake	47005:1	-	-	-	-	✓	-	-
Lavanya Huryali (Chromium Oxide Green)	77288	✓	✓	-	-	-	-	-
Lavanya Aasmani (Ultramarine Blue)	77007	✓	✓	-	-	-	-	-
Lavanya Rosy (Ultramarine Pink)	77007	-	-	-	-	✓	-	-
Lavanya Gagan (Iron Blue)	77510	-	✓	-	-	-	-	-

Surface Treatment under development :

- Lauroyl Lysine



Key highlights of Neelikon Make Surface Treated Pigments:



High colour strength
for pigments



Cold processing, easy
addition without grinding



Oil and Water Repellent -
Oleophobic and Hydrophobic



Good batch
consistency



Water Dispersible -
Hydrophilic



Water Repellent -
Hydrophobic



Reduces process time and
equipment, huge cost savings



Regulatory
Complies

Disclaimer

Neelikon realizes that it is serving an ever-changing marketplace, therefore legislation and new development may cause the information contained herein to require updating. We request clients to re-check internally with their appropriate technical department and with their appropriate legislative authorities before using any of our suggested formulations or any of our products in their intended application. Neelikon makes no representation or warranty of any kind, express or implied including merchantability, suitability or fitness. Customer is responsible to independently determine suitability of Neelikon's products and formulations in their intended application. Customer shall also be responsible for obtaining third-party intellectual property licenses that may be required, if any.

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